DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-002473
Date Inspected: 25-Mar-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 630
OSM Departure Time: 1700
Location: Shanghai, China

CWI Name:	Zhao Chen Sun, and See Below	**CWI Present:**	☑ Yes ☐ No
Inspected CWI report:	☐ Yes ☑ No ☐ N/A	**Rod Oven in Use:**	☑ Yes ☐ No ☐ N/A
Electrode to specification:	☑ Yes ☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes ☐ No ☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No ☐ N/A
Approved Drawings:	☑ Yes ☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No ☐ N/A
		Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: See Below

Summary of Items Observed:

The Caltrans Quality Assurance (QA) Inspector, M. Paul Stovall, was present at Zhenhua Port Machinery Company (ZPMC) on Changxing Island, Shanghai, China for the purpose of monitoring Quality Control (QC) functions during the fabrication of the Self Anchored Suspension (SAS) section of the San Francisco/Oakland Bay Bridge.

New Tower Shop

ZPMC personnel were observed by the QA Inspector drilling bolt holes into the assembled and welded Struts.

The QA Inspector observed ZPMC personnel heat straightening various Skin plates and cutting bevels onto Interior Splice Connection plates using the horizontal mill.

Bay 2

ZPMC personnel were observed by the QA inspector drilling bolt holes into diagonal tube steel (TS) braces that will be used on the Orthotropic Box Girder (OBG), specifically on the Floor Beams (FB).

The QA Inspector observed ZPMC cutting plate material that is for the Tower Skin plates.

Bay 3

The QA Inspector observed ZPMC personnel fit and tack weld WT stiffeners onto Bottom Plates (BP) and Side Plates (SP). This is on BP137-001, BP110-001, BP164-001, and SP015-01. The welders doing this work are Zhang Feng, ID #049769, and Li Wenguo, ID #066261, and He Shibing, ID #066243.

ZPMC welder Li Zhaoqian, ID #048810, was observed by the QA inspector welding Complete Joint Penetration (CJP) welds on W21 x 57's which will later be cut into WT stiffeners.

Bay 4

The QA Inspector observed ZPMC personnel continuing to weld an Internal Tower Diaphragm plate. This is ESD1-SA287-3A and 4A. The ZPMC Certified Welding Inspector (CWI) Zhao Chen Sun is adequately monitoring the material temperature not allowing the material to get too hot or too cold. Welding progressed throughout the day. The wps used is WPS-B-T-3221-B-U3c-5-1, and this is a Submerged Arc Welding (SAW) wps. The QA Inspector checked the WPS parameters at different times and recorded 617 amps, 29.9 volts; and 623 amps, 30.4 volts.

A repair was in progress on Internal Tower Diaphragm plate weld number SSD1-SA27-1A; ZPMC QC personnel were present monitoring the work. The QA Inspector was present and observed ZPMC QC personnel adequately monitoring the work around them. The ZPMC welder is Dai Lu, ID #048659. The WPS used is WPS-485-REPAIR-SMAW-1G. This is a manual weld process.

The QA Inspector observed various Internal Tower Diaphragm Plates that were being Heat Straightened.
The QA Inspector observed ZPMC QC start an Ultrasonic Test (UT) on Internal Tower Diaphragm plate splice SSD1-SA335-1B, the QC Inspector that was performing the UT found several high amplitude indications. When asked by QA as to the disposition of these indications, the QC Inspector tapped his finger near to where he was working indicating the possibility of him using "finger dampening." The QA Inspector mentioned this to an ABF QC Inspector who had walked up and he in turn mentioned something to ZPMC QC. ZPMC personnel started polishing the toe of the weld after it was turned onto the other side.

Bay 7

His Task Leader told the QA inspector that ZPMC QC personnel would be performing Magnetic Particle Tests (MT) on several Floor Beams under the direction of CWR-040. When the QA Inspector arrived, he observed MT on these Floor Beams (FB) FB016-03-009, FB015-03-001 and 009, FB016-02-03, FB014-01-045, and FB014-04-042. These welds appeared to meet the contract documents.

The QA Inspector observed ZPMC personnel were fit and tack weld plate stiffeners onto FB022-02, while other ZPMC personnel using an acetylene torch were trimming FB018-02 and FB022-02 to size.

Bay 8

The QA Inspector observed ZPMC personnel fit and tack weld Internal Tower Diaphragm plates P207 and SA265 N in preparation of welding. This is at the 38-meter elevation. Diaphragm Plates P559 and SA293, 38 meter elevation are being preheated for welding. This is a Complete Joint Penetration (CJP) weld.

ZPMC personnel were observed by the QA inspector welding SSD1-SA270, 48-meter elevation, Diaphragm Plate splice.

This is a Submerged Arc Weld, using WPS-B-T-3221-B-U3c-5-1. Welding progressed throughout the day and QC personnel monitored this.

Summary of Conversations:

The QA Inspector had conversations with ABF QC personnel regarding the improvements that ZPMC QC personnel have shown maintain the material temperature during the welding process by aggressively monitoring the temperature.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Stovall,Paul	Quality Assurance Inspector
Reviewed By:	Hager,Craig	QA Reviewer